

WHAT IS CLAIMED AS NEW AND IS DESIRED TO BE SECURED BY LETTERS
PATENT OF THE UNITED STATES IS:

1. An image processing apparatus provided with a primary memory device and a
5 secondary memory device both having image data memorized therein, in which said image
data are input to said primary memory device, the apparatus comprising:

an external input data amount acquisition device acquiring the amount of said image
data input to said primary memory device;

10 an internal output data amount acquisition device acquiring the amount of said image
data output from said primary memory device and input to said secondary memory device;

a first difference data amount calculation device subtracting the amount of the data
acquired by said internal output data amount acquisition device from the amount of the data
acquired by said external input data amount acquisition device, and calculating first
difference data amount by the subtraction;

15 a memory access control device practicing the inputting and outputting of said image
data with time sharing in said primary memory device, comparing said first difference data
amount with a first value and a second value larger than said first value, stopping the
processing of outputting said image data from said primary memory device to said secondary
memory device when said first difference data amount reaches the value equal to or smaller
20 than said first value, and starting again the processing of outputting said image data from said
primary memory device to said secondary memory device when said first difference data
amount reaches the value equal to or larger than said second value; and

an error signal outputting device comparing said first difference data amount with a
third value larger than said second value and a fourth value smaller than said first value, and
25 outputting an error signal when said first difference data amount reaches the value equal to or
larger than said third value or when said first difference data amount reaches the value equal

to or smaller than said fourth value.

2. The image processing apparatus as defined in claim 1, wherein said image processing apparatus further comprises:

5 a variation amount recording device detecting the variation amount of said first difference data and recording the maximum value of said variation amount per unit of the predetermined pages number; and

a set value renewal device renewing said third value previously set on the basis of the maximum value of the variation amount recorded by said variation amount recording device.

10 3. The image processing apparatus as defined in claim 1, wherein said primary memory device inputs and outputs in order said image data line by line with the method of raster; and

15 wherein said external input data amount acquisition device and said internal output data amount acquisition device acquire the amount of said image data as the number of lines.

4. The image processing apparatus as defined in claim 2, wherein said primary memory device inputs and outputs in order said image data line by line with the method of raster; and

20 wherein said external input data amount acquisition device and said internal output data amount acquisition device acquire the amount of said image data as the number of lines.

25 5. An image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are output to outside from said primary memory device, the apparatus comprising;

an internal input data amount acquisition device acquiring the amount of said image data input to said primary memory device from said secondary memory device;

an external output data amount acquisition device acquiring the amount of said image data output to outside from said primary memory device;

5 a second difference data amount calculation device subtracting the amount of the data acquired by said external output data amount acquisition device from the amount of the data acquired by said internal input data amount acquisition device, and calculating second difference data amount by the subtraction;

10 a memory access control device practicing the inputting and outputting of said image data with time sharing in said primary memory device, comparing said second difference data amount with a fifth value and a sixth value larger than said fifth value, stopping the processing of outputting said image data from said primary memory device to said secondary memory device when said second difference data amount reaches the value equal to or larger than said fifth value, and starting again the processing of outputting said image data from said
15 primary memory device to said secondary memory device when said second difference data amount reaches the value equal to or smaller than said sixth value; and

an error signal outputting device comparing said second difference data amount with a seventh value larger than said sixth value and a eighth value smaller than said fifth value, and outputting an error signal when said second difference data amount reaches the value
20 equal to or larger than said seventh value or when said second difference data amount reaches the value equal to or smaller than said eighth value.

6. The image processing apparatus as defined in claim 5, wherein said memory access control device previously inputs said image data of the amount corresponding to said
25 fifth value to said primary memory device from said secondary memory device, prior to the

outputting of said image data from said primary memory device.

7. The image processing apparatus as defined in claim 5, wherein said error signal outputting device outputs the error signal only during the time period of practicing the processing of outputting said image data to outside from said primary memory device.

8. The image processing apparatus as defined in claim 6, wherein said error signal outputting device outputs the error signal only during the time period of practicing the processing of outputting said image data to outside from said primary memory device.

9. The image processing apparatus as defined in claim 5, wherein said image processing apparatus further comprises:

a variation amount recording device detecting the variation amount of said second difference data only during the time period of practicing the processing of outputting said image data from said primary memory device, and recording the maximum value of the variation amount per unit of the predetermined pages number; and

a set value renewal device renewing said seventh value previously set on the basis of the maximum value of the variation amount recorded by said variation amount recording device.

10. The image processing apparatus as defined in claim 6, wherein said image processing apparatus further comprises:

a variation amount recording device detecting the variation amount of said second difference data only during the time period of practicing the processing of outputting said image data from said primary memory device, and recording the maximum value of the

variation amount per unit of the predetermined pages number; and

a set value renewal device renewing said seventh value previously set on the basis of the maximum value of the variation amount recorded by said variation amount recording device.

5

11. The image processing apparatus as defined in claim 7, wherein said image processing apparatus further comprises:

a variation amount recording device detecting the variation amount of said second difference data only during the time period of practicing the processing of outputting said image data from said primary memory device, and recording the maximum value of the variation amount per unit of the predetermined pages number; and

a set value renewal device renewing said seventh value previously set on the basis of the maximum value of the variation amount recorded by said variation amount recording device.

15

12. The image processing apparatus as defined in claim 5, wherein said primary memory device inputs and outputs in order said image data with the method of raster; and

wherein said internal input data amount acquisition device and said external output data amount acquisition device acquire the amount of said image data as the lines number.

20

13. The image processing apparatus as defined in claim 6, wherein said primary memory device inputs and outputs in order said image data with the method of raster; and

wherein said internal input data amount acquisition device and said external output data amount acquisition device acquire the amount of said image data as the lines number.

25

14. The image processing apparatus as defined in claim 7, wherein said primary memory device inputs and outputs in order said image data with the method of raster; and wherein said internal input data amount acquisition device and said external output data amount acquisition device acquire the amount of said image data as the lines number.

5

15. The image processing apparatus as defined in claim 9, wherein said primary memory device inputs and outputs in order said image data with the method of raster; and wherein said internal input data amount acquisition device and said external output data amount acquisition device acquire the amount of said image data as the lines number.

10

16. An image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are read out from said primary memory device and said image data thus read out are output together with a synchronization signal, the apparatus comprising:

15

an image data reading-out device reading out said image data memorized in said secondary memory device;

an image data cutting-out device cutting out said image data read out by said image data reading-out device in the area corresponding to the predetermined area of the image formed on the basis of said image data; and

20

an image data transmission device transmitting said image data cut out by said image data cutting-out device to said primary memory device.

25

17. The image processing apparatus as defined in claim 16, wherein said image processing apparatus further comprises a cutting-out area changing device changing the area of said image data cut out by said image data cutting-out device per unit of minimum amount

of the image data which can be transmitted by said image data transmission device.

18. The image processing apparatus as defined in claim 1, wherein said image processing apparatus further comprises:

5 an image data compression device compressing said image data before being memorized in said secondary memory device; and

 an image data decompression device decompressing said image data after being read out from said secondary memory device by said image data reading-out device.

10 19. The image processing apparatus as defined in claim 1, wherein said secondary memory device is a magnetic disc apparatus.

 20. The image processing apparatus as defined in claim 1, wherein said primary memory device is a memory constructed with a semiconductor.

15 21. A printer apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are read out from said primary memory device and said image data thus read out are output to a print practicing device together with a synchronization signal, the printer apparatus comprising:

20 an image data reading-out device reading out said image data memorized in said secondary memory device;

 an image data cutting-out device cutting out said image data read out by said image data reading-out device in the area corresponding to the predetermined area of the image formed on the basis of said image data; and

25 an image data transmission device transmitting said image data cut out by said image

data cutting-out device to said primary memory device.

22. The printer apparatus as defined in claim 21, wherein said printer apparatus further comprises a cutting-out area changing device changing the area of said image data cut out by said image data cutting-out device per unit of minimum amount of the image data which can be transmitted by said image data transmission device.

23. The printer apparatus as defined in claim 21, wherein said printer apparatus further comprises:

an image data compression device compressing said image data before being memorized in said secondary memory device; and

an image data decompression device decompressing said image data after being read out from said secondary memory device by said image data reading-out device.

24. The printer apparatus as defined in claim 22, wherein said printer apparatus further comprises:

an image data compression device compressing said image data before being memorized in said secondary memory device; and

an image data decompression device decompressing said image data after being read out from said secondary memory device by said image data reading-out device.

25. The printer apparatus as defined in claim 21, wherein said secondary memory device is a magnetic disc apparatus.

26. The printer apparatus as defined in claim 21, wherein said primary memory

device is a memory constructed with a semiconductor.

27. A copying apparatus, comprising:

an image data reading-out device reading out an image and creating image data on the
5 basis of said image;

a primary memory device and a secondary memory device both memorizing said
image data therein; and

a print practicing device printing the image based on said image data read out from
said primary memory device and output together with a synchronization signal,

10 wherein said copying apparatus further comprises:

an image data reading-out device reading out said image data memorized in said
secondary memory device;

an image data cutting-out device cutting out said image data read out by said image
data reading-out device in the area corresponding to the predetermined area of the image
15 formed on the basis of said image data; and

an image data transmission device transmitting said image data cut out by said image
data cutting-out device to said primary memory device.

28. The copying apparatus as defined in claim 27, wherein said copying apparatus
20 further comprises a cutting-out area changing device changing the area of said image data cut
out by said image data cutting-out device per unit of minimum amount of the image data
which can be transmitted by said image data transmission device.

29. The copying apparatus as defined in claim 27, wherein said copying apparatus
25 further comprises:

an image data compression device compressing said image data before being memorized in said secondary memory device; and

an image data decompression device decompressing said image data after being read out from said secondary memory device by said image data reading-out device.

5

30. The copying apparatus as defined in claim 28, wherein said copying apparatus further comprises:

an image data compression device compressing said image data before being memorized in said secondary memory device; and

an image data decompression device decompressing said image data after being read out from said secondary memory device by said image data reading-out device.

31. The copying apparatus as defined in claim 27, wherein said secondary memory device is a magnetic disc apparatus.

32. The copying apparatus as defined in claim 27, wherein said primary memory device is a memory constructed with a semiconductor.

33. A facsimile apparatus, comprising:

an image data reception device receiving transmitted image data;

a primary memory device and a secondary memory device both having said image data memorized therein; and

a print practicing device printing the image based on said image data read out from said primary memory device and output together with a synchronization signal,

wherein said facsimile apparatus further comprises:

an image data reading-out device reading out said image data memorized in said secondary memory device;

an image data cutting-out device cutting out said image data read out by said image data reading-out device in the area corresponding to the predetermined area of the image formed on the basis of said image data; and

an image data transmission device transmitting said image data cut out by said image data cutting-out device to said primary memory device.

34. The facsimile apparatus as defined in claim 33, wherein said facsimile apparatus further comprises a cutting-out area changing device changing the area of said image data cut out by said image data cutting-out device per unit of minimum amount of the image data which can be transmitted by said image data transmission device.

35. The facsimile apparatus as defined in claim 33, wherein said facsimile apparatus further comprises:

an image data compression device compressing said image data before being memorized in said secondary memory device; and

an image data decompression device decompressing said image data after being read out from said secondary memory device by said image data reading-out device.

36. The facsimile apparatus as defined in claim 34, wherein said facsimile apparatus further comprises:

an image data compression device compressing said image data before being memorized in said secondary memory device; and

an image data decompression device decompressing said image data after being read

out from said secondary memory device by said image data reading-out device.

37. The facsimile apparatus as defined in claim 33, wherein said secondary memory device is a magnetic disc apparatus.

38. The facsimile apparatus as defined in claim 33, wherein said primary memory device is a memory constructed with a semiconductor.

39. An image processing method applicable to an image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are input to said primary memory device from outside, the method comprising the steps of:

an external input data amount acquisition process of acquiring the amount of said image data input to said primary memory device from outside;

an internal output data amount acquisition process of acquiring the amount of said image data output from said primary memory device and input to said secondary memory device;

a first difference data amount calculation process of subtracting the amount of the data acquired in said internal output data amount acquisition process from the amount of the data acquired in said external input data amount acquisition process, and calculating first difference data amount by the subtraction;

a memory access control process of practicing the inputting and outputting of said image data with time sharing in said primary memory device, comparing said first difference data amount with a first value and a second value larger than said first value, stopping the processing of outputting said image data from said primary memory device to said secondary

memory device when said first difference data amount reaches the value equal to or smaller than said first value, and starting again the processing of outputting said image data from said primary memory device to said secondary memory device when said first difference data amount reaches the value equal to or larger than said second value; and

5 an error signal outputting process of comparing said first difference data amount with a third value larger than said second value and a fourth value smaller than said first value, and outputting an error signal when said first difference data amount reaches the value equal to or larger than said third value or when said first difference data amount reaches the value equal to or smaller than said fourth value.

10 40. The image processing method as defined in claim 39, further comprising the step of:

a setting process of setting said first value, said second value, said third value, and said fourth value, all to be compared with said first difference data amount.

15 41. The image processing method as defined in claim 39, further comprising the steps of:

a variation amount recording process of detecting the variation amount of said first difference data and recording the maximum value of said variation amount per unit of the predetermined pages number; and

20 a set value changing process of changing said third value previously set on the basis of the maximum value of the variation amount recorded in said variation amount recording process.

25 42. The image processing method as defined in claim 40, further comprising the

steps of:

a variation amount recording process of detecting the variation amount of said first difference data and recording the maximum value of said variation amount per unit of the predetermined pages number; and

5 a set value changing process of changing said third value previously set on the basis of the maximum value of the variation amount recorded in said variation amount recording process.

10 43. The image processing method as defined in claim 39, wherein said primary memory device inputs and outputs in order said image data line by line with the method of raster; and

wherein, in said external input data amount acquisition process and said internal output data amount acquisition process, the amount of said image data are acquired as the number of lines.

15 44. An image processing method applicable to an image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are output to outside from said primary memory device, the method comprising the steps of:

20 an internal input data amount acquisition process of acquiring the amount of said image data input from said secondary memory device to said primary memory device;

an external output data amount acquisition process of acquiring the amount of said image data output from said primary memory device to outside;

25 a second difference data amount calculation process of subtracting the amount of the data acquired in said external output data amount acquisition process from the amount of the

data acquired in said internal input data amount acquisition process, and calculating second difference data amount by the subtraction;

a memory access control process of practicing the inputting and outputting of said image data with time sharing in said primary memory device, comparing said second difference data amount with a fifth value and a sixth value larger than said fifth value, stopping the processing of outputting said image data from said primary memory device to said secondary memory device when said second difference data amount reaches the value equal to or larger than said fifth value, and starting again the processing of outputting said image data from said primary memory device to said secondary memory device when said second difference data amount reaches the value equal to or smaller than said sixth value; and

an error signal outputting process of comparing said second difference data amount with a seventh value larger than said sixth value and a eighth value smaller than said fifth value, and outputting an error signal when said second difference data amount reaches the value equal to or larger than said seventh value or when said second difference data amount reaches the value equal to or smaller than said eighth value.

45. The image processing method as defined in claim 44, wherein, in said memory access control process, said image data of the amount corresponding to said fifth value are previously input to said primary memory device from said secondary memory device, prior to the outputting of said image data from said primary memory device.

46. The image processing method as defined in claim 44, wherein said error signal outputting process comprises:

a step of outputting said error signal only during the time period of practicing the process of outputting said image data from said primary memory device to outside.

47. The image processing method as defined in claim 45, wherein said error signal outputting process comprises:

a step of outputting said error signal only during the time period of practicing the process of outputting said image data from said primary memory device to outside.

48. The image processing method as defined in claim 44, comprising the steps of:

a variation amount recording process of detecting the variation amount of said second difference data only during the time period of practicing the process of outputting said image data from said primary memory device and recording the maximum value of said variation amount per unit of the predetermined pages number; and

a set value renewal process of renewing said seventh value previously set on the basis of the maximum value of the variation amount recorded in said variation amount recording process.

49. The image processing method as defined in claim 45, comprising the steps of:

a variation amount recording process of detecting the variation amount of said second difference data only during the time period of practicing the process of outputting said image data from said primary memory device and recording the maximum value of said variation amount per unit of the predetermined pages number; and

a set value renewal process of renewing said seventh value previously set on the basis of the maximum value of said variation amount recorded in said variation amount recording process.

50. The image processing method as defined in claim 44, wherein said primary

memory device inputs and outputs in order said image data line by line with the method of raster; and

wherein in said internal input data amount acquisition process and in said external output data amount acquisition process, the amount of said image data are acquired as the number of lines.

51. An image processing method applicable to an image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are read out from said primary memory device and said image data thus read out are output together with a synchronization signal, the method comprising the steps of:

an image data reading-out process of reading out said image data memorized in said secondary memory device;

an image data cutting-out process of cutting out said image data read out by said image data reading-out device in the area corresponding to the predetermined area of the image formed on the basis of said image data; and

an image data transmission process of transmitting said image data cut out by said image data cutting-out device to said primary memory device.

52. The image processing apparatus as defined in claim 51, wherein said image processing method further comprises the step of:

a cutting-out area changing process of changing the area of said image data cut out in said image data cutting-out process per unit of the minimum image data amount which can be transmitted in said image data transmission process.

505 B1
53. The image processing method as defined in claim 39, wherein said image processing method further comprises the steps of:

an image data compression process of compressing said image data before memorizing said image data in said primary memory device; and

5 an image data decompression process of decompressing said image data after reading out said image data from said secondary memory device by said image data reading-out device.

10 54. The image processing method as defined in claim 44, wherein said image processing method further comprises the steps of:

an image data compression process of compressing said image data before memorizing said image data in said primary memory device; and

15 an image data decompression process of decompressing said image data after reading out said image data from said secondary memory device by said image data reading-out device.

55. The image processing method as defined in claim 51, wherein said image processing method further comprises the steps of:

20 an image data compression process of compressing said image data before memorizing said image data in said primary memory device; and

an image data decompression process of decompressing said image data after reading out said image data from said secondary memory device by said image data reading-out device.

25 56. A computer readable recording medium for recording a program of causing a

computer to practice an image processing method applicable to an image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are input to said primary memory device from outside, wherein said computer readable recording medium records the
5 program of causing said computer to practice the image processing method comprising the steps of:

an external input data amount acquisition process of acquiring the amount of said image data input to said primary memory device from outside;

10 an internal output data amount acquisition process of acquiring the amount of said image data output from said primary memory device and input to said secondary memory device;

15 a first difference data amount calculation process of subtracting the amount of the data acquired in said internal output data amount acquisition process from the amount of the data acquired in said external input data amount acquisition process, and calculating first difference data amount by the subtraction;

20 a memory access control process of practicing the inputting and outputting of said image data with time sharing in said primary memory device, comparing said first difference data amount with a first value and a second value larger than said first value, stopping the processing of outputting said image data from said primary memory device to said secondary memory device when said first difference data amount reaches the value equal to or smaller than said first value, and starting again the processing of outputting said image data from said primary memory device to said secondary memory device when said first difference data amount reaches the value equal to or larger than said second value; and

25 an error signal outputting process of comparing said first difference data amount with a third value larger than said second value and a fourth value smaller than said first

value, and outputting an error signal when said first difference data amount reaches the value equal to or larger than said third value or when said first difference data amount reaches the value equal to or smaller than said fourth value.

5 57. The computer readable recording medium as defined in claim 56, wherein said recording medium records the program of causing said computer to practice said image processing method further comprising the step of:

 a setting process of setting said first value, said second value, said third value, and said fourth value to be compared with said first difference data amount.

10 58. The computer readable recording medium as defined in claim 56, wherein said recording medium records the program of causing said computer to practice said image processing method further comprising the steps of:

15 a variation amount recording process of detecting the variation amount of said first difference data and recording the maximum value of said variation amount per unit of the predetermined pages number; and

 a set value renewal process of renewing said third value previously set on the basis of the maximum value of said variation value recorded in said variation amount recording process.

20 59. The computer readable recording medium as defined in claim 57, wherein said recording medium records the program of causing said computer to practice said image processing method further comprising the steps of:

25 a variation amount recording process of detecting the variation amount of said first difference data and recording the maximum value of said variation amount per unit of the

predetermined pages number; and

a set value renewal process of renewing said third value previously set on the basis of the maximum value of said variation value recorded in said variation amount recording process.

5

60. The computer readable recording medium as defined in claim 56, wherein said recording medium records the program of causing said computer to practice said image processing method further comprising:

wherein said primary memory device inputs and outputs in order said image data line by line with the method of raster; and

wherein said external input data amount acquisition device and said internal output data amount acquisition device acquire the amount of said image data as the number of lines.

61. A computer readable recording medium for recording a program of causing a computer to practice an image processing method applicable to an image processing apparatus provided with a primary memory device and a secondary memory device both having image data memorized therein, in which said image data are output to outside from said primary memory device, wherein said computer readable recording medium records the program of causing said computer to practice the image processing method comprising the steps of:

an internal input data amount acquisition process of acquiring the amount of said image data input to said primary memory device from said secondary memory device;

an external output data amount acquisition process of acquiring the amount of said image data output to outside from said primary memory device;

a second difference data amount calculation process of subtracting the amount of the

data acquired by said external output data amount acquisition device from the amount of the data acquired by said internal input data amount acquisition device, and calculating second difference data amount by the subtraction;

a memory access control process of practicing the inputting and outputting of said image data with time sharing in said primary memory device, comparing said second difference data amount with a fifth value and a sixth value larger than said fifth value, stopping the processing of outputting said image data from said primary memory device to said secondary memory device when said second difference data amount reaches the value equal to or larger than said fifth value, and starting again the processing of outputting said image data from said primary memory device to said secondary memory device when said second difference data amount reaches the value equal to or smaller than said sixth value; and

an error signal outputting process of comparing said second difference data amount with a seventh value larger than said sixth value and an eighth value smaller than said fifth value, and outputting an error signal when said second difference data amount reaches the value equal to or larger than said seventh value or when said second difference data amount reaches the value equal to or smaller than said eighth value.

62. The computer readable recording medium as defined in claim 61, wherein, in said memory access control process, said recording medium records the program of causing said computer to practice said image processing method of previously inputting said image data of the amount corresponding to said fifth value to said primary memory device from said secondary memory device, prior to the outputting of said image data from said primary memory device.

63. The computer readable recording medium as defined in claim 61, wherein, in

said error signal outputting process, said recording medium records the program of causing said computer to practice said image processing method of outputting the error signal only during the time period of practicing the process of outputting said image data to outside from said primary memory device.

5

64. The computer readable recording medium as defined in claim 62, wherein, in said error signal outputting process, said recording medium records the program of causing said computer to practice said image processing method of outputting the error signal only during the time period of practicing the process of outputting said image data to outside from said primary memory device.

10

65. The computer readable recording medium as defined in claim 61, wherein said recording medium records the program of causing said computer to practice said image processing method further comprising the steps of:

15

a variation amount recording process of detecting the variation amount of said second difference data only during the time period of practicing the process of outputting said image data from said primary memory device; and

20

a set value renewal process of renewing said seventh value previously set on the basis of the maximum value of said variation amount recorded in said variation amount recording process.

25

66. The computer readable recording medium as defined in claim 61, wherein said recording medium records the program of causing said computer to practice the image processing method, in which said primary memory device inputs and outputs in order said image data line by line with the method of raster and the amount of said image data is

acquired as the lines number in said internal input data amount acquisition process and in said external output data amount acquisition process.

67. A computer readable recording medium for recording a program of causing a
5 computer to practice an image processing method applicable to an image processing
apparatus provided with a primary memory device and a secondary memory device both
having image data memorized therein, in which said image data are read out from said
primary memory device and said image data thus read out are output together with a
synchronization signal, wherein said computer readable recording medium records the
10 program of causing said computer to practice the image processing method comprising the
steps of:

an image data reading-out process of reading out said image data memorized in said
secondary memory device;

15 an image data cutting-out process of cutting out said image data read out by said
image data reading-out device in the area corresponding to the predetermined area of the
image formed on the basis of said image data; and

an image data transmission process of transmitting said image data cut out by said
image data cutting-out device to said primary memory device.

20 68. The computer readable recording medium as defined in claim 67, wherein said
computer readable recording medium records the program of causing said computer to
practice the image processing method further comprises the step of:

a cutting-out area changing process of changing the area of said image data cut out in
said image data cutting-out process per unit of minimum image data amount which can be
25 transmitted in said image data transmission process.

69. The computer readable recording medium as defined in claim 56, wherein said computer readable recording medium records the program of causing said computer to practice the image processing method further comprises the steps of:

5 an image data compression process of compressing said image data before memorizing said image data in said secondary memory device; and

 an image data decompression process of decompressing said image data after reading out said image data from said secondary memory device by said image data reading-out device.

10 70. The image processing apparatus as defined in claim 1, wherein said memory access control device previously inputs said image data of the amount corresponding to said first value to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

15 71. The image processing apparatus as defined in claim 2, wherein said memory access control device previously inputs said image data of the amount corresponding to said first value to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

20 72. The image processing apparatus as defined in claim 3, wherein said memory access control device previously inputs said image data of the amount corresponding to said first value to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

73. The image processing apparatus as defined in claim 1, wherein said error signal outputting device outputs the error signal only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

5

74. The image processing apparatus as defined in claim 2, wherein said error signal outputting device outputs the error signal only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

10

75. The image processing apparatus as defined in claim 3, wherein said error signal outputting device outputs the error signal only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

15

76. The image processing apparatus as defined in claim 53, wherein said error signal outputting device outputs the error signal only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

20

77. The image processing method as defined in claim 39, wherein, in said memory access control process, said image data of the amount corresponding to said first value are previously input to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

25

5.6 B3 }
78. The image processing method as defined in claim 40, wherein, in said memory access control process, said image data of the amount corresponding to said first value are previously input to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

5
79. The image processing method as defined in claim 41, wherein, in said memory access control process, said image data of the amount corresponding to said first value are previously input to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

10
80. The image processing method as defined in claim 39, wherein, in said error signal outputting process, the error signal is output only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

15
5.6 B4 }
81. The image processing method as defined in claim 40, wherein, in said error signal outputting process, the error signal is output only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

20
82. The image processing method as defined in claim 41, wherein, in said error signal outputting process, the error signal is output only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

83. The image processing method as defined in claim 77, wherein, in said error signal outputting process, the error signal is output only during the time period of practicing the process of outputting said image data to said secondary memory device from said primary memory device.

5

84. The computer readable recording medium as defined in claim 56, wherein, in said memory access control process, said recording medium records the program of causing said computer to practice the image processing method of previously inputting said image data of the amount corresponding to said first value to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

10

56135 } 85. The computer readable recording medium as defined in claim 57, wherein, in said memory access control process, said recording medium records the program of causing said computer to practice the image processing method of previously inputting said image data of the amount corresponding to said first value to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

15

86. The computer readable recording medium as defined in claim 58, wherein, in said memory access control process, said recording medium records the program of causing said computer to practice the image processing method of previously inputting said image data of the amount corresponding to said first value to said primary memory device from outside, prior to the outputting of said image data to said secondary memory device from said primary memory device.

20

25

87. The computer readable recording medium as defined in claim 56, wherein, in
said error signal outputting process, said recording medium records the program of causing
said computer to practice the image processing method of outputting the error signal only
5 during the time period of practicing the process of outputting said image data to said
secondary memory device from said primary memory device.

56 B6 }
88. The computer readable recording medium as defined in claim 57, wherein, in
said error signal outputting process, said recording medium records the program of causing
10 said computer to practice the image processing method of outputting the error signal only
during the time period of practicing the process of outputting said image data to said
secondary memory device from said primary memory device.

89. The computer readable recording medium as defined in claim 58, wherein, in
15 said error signal outputting process, said recording medium records the program of causing
said computer to practice the image processing method of outputting the error signal only
during the time period of practicing the process of outputting said image data to said
secondary memory device from said primary memory device.

20 90. The computer readable recording medium as defined in claim 84, wherein, in
said error signal outputting process, said recording medium records the program of causing
said computer to practice the image processing method of outputting the error signal only
during the time period of practicing the process of outputting said image data to said
secondary memory device from said primary memory device.